

Bulletin 2-10-13
Electrical equipment near combustible gas equipment
Rule 2-326 and 6-408

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Rule 2-326 states that the clearance between arc-producing electrical equipment and a combustible gas relief device or vent shall be in accordance with the requirements of CSA B149.1, “Natural gas and propane installation code”, which uses the terms “source of ignition” and “discharge openings of relief devices”.

Questions have been asked regarding the specific types of electrical equipment covered by the Rule.

Arc-producing electrical equipment which is considered a source of ignition includes, but is not limited to: receptacles, switches, meter base plug in transfer devices, meter base plug in devices with an internal service disconnecting feature, electric metering equipment with an internal service disconnecting feature, air conditioning units, and related disconnecting means. This interpretation is consistent with the rules concerning the use of electrical equipment in Class 1 Zone 2 locations.

Meter bases, conventional mechanical meters and conventional smart meters are not a source of ignition, and are permitted to be located within 1 metre of a natural gas discharge opening and 3 metres of a propane gas discharge opening. A meter is considered a conventional meter if it does not contain an internal service disconnecting feature.

All sources of ignition, regardless of the date of installation, shall be kept outside of the clearance shown in Figure B1. Meter mounting device (meter base) locations, as per Rule 6-408 f), shall be in compliance with the requirements of the supply authority.

Direction

For the application of Rule 2-234

The following equipment is not considered a source of ignition:

1. Conventional mechanical meters (**Photo B1**); and
2. Conventional smart meters, no service disconnecting feature (**Photo B2**).

The following equipment is considered a source of ignition:

1. Electrical metering equipment (e.g. smart meters) with an internal service disconnecting feature (**Photo B3**);
2. Meter base plug in transfer devices (**Photo B4**); and
3. Meter base plug in devices with an internal service disconnecting feature, including remote disconnects (**Photo B5**).



Photo B1



Photo B2



Photo B3



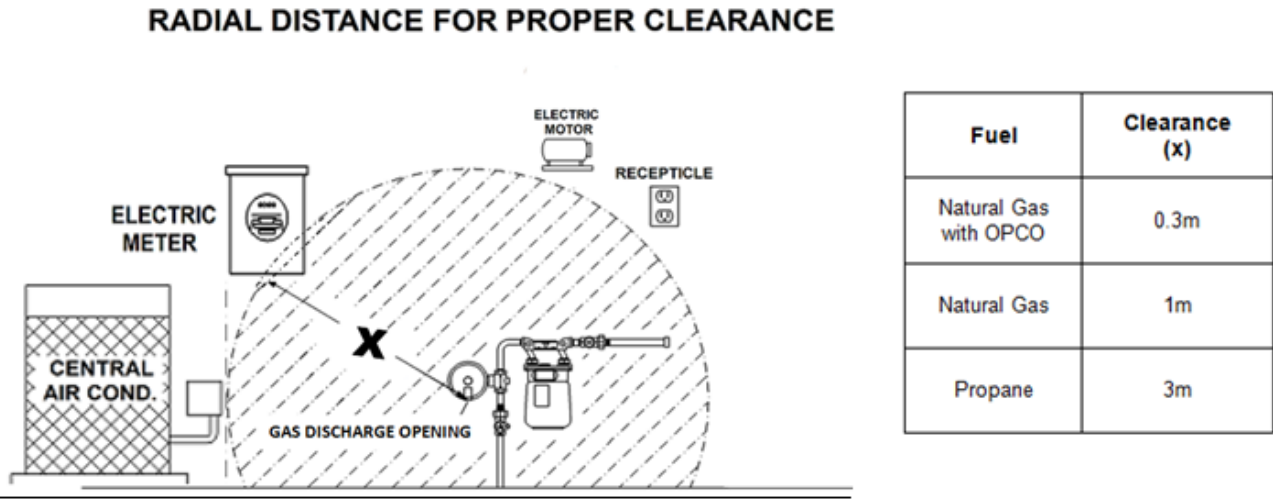
Photo B4



Photo B5

Figure B1 illustrates an example of an installation that complies with the minimum requirements.

Figure B1 - Minimum clearance required between electrical equipment and gas discharge opening according to CSA B149.1



Question

Is it permitted to install arc producing electrical equipment which are considered a source of ignition (e.g. A/C unit) at a distance of less than 1 m from the discharge opening of a natural gas relief device or vent?

Answer

No, unless a certified Overpressure Cut-Off (OPCO) with limited relief (LR) or no relief (P) is installed. In this case, sources of ignition may be installed no closer than 0.30 m (1 ft.) from the gas discharge opening of the relief device. The over pressure relief device must be marked “LR-OPCO” or “P-OPCO” (see the example in Photo B6).

Photo B6 – OPCO Device



Background

CSA-B149.1 - Code Adoption Document Amendment FS-225-17 of the “Natural Gas and Propane Installation Code” Section 5.5.9 contains:

- Table 5.2 lists the “Clearance from discharge openings of relief devices located in supply lines”. For a natural gas certified OPCO conforming to ANSI Z21.80/CSA 6.22, the clearance from a source of ignition is 0.3 m. Table 5.2 is used when the relief device is located downstream of the utility termination.
- Table 5.3 lists the “Clearance from discharge openings of service relief devices”. For natural gas service regulators certified to CSA 6.18, incorporating OPCO system and with limited relief of 1.5 m³/h (50 scf/h), the clearance from a source of ignition is 0.3 m. Table 5.3 is used when the relief device is located upstream of the utility termination.

Photo B7 is provided to show the demarcation point and shows a relief device that is located upstream of the utility termination.

On residential sites where there is very little space to obtain the required clearance of 1 m, the use of a natural gas certified OPCO regulator is an acceptable solution to the problem of separation. This may be applied for any type of equipment that is considered a source of ignition located at a distance of less than 1 m from the discharge opening.

Photo B7 – Typical Demarcation

